

SERVICE MANUAL

RADIO CASSETTE RECORDER

• BASIC TAPE MECHANISM : TN-21ZVC-1145

This Service Manual is the "Revision Publishing" and replaces "Simple Manual" (S/M Code No.09-997-333-6T2).

SPECIFICATIONS

Tuner section

Frequency range:	FM: 87.5 - 108.0 MHz MW: 530 - 1,605 kHz LW: 150 - 285 kHz
Antenna:	FM: Rod antenna MW, LW :Ferrite bar antenna

Deck section

Track format	2 tracks, 1 channel
Frequency range	Normal tape: 50 - 10,000 Hz (EIAJ)
Recording system	AC bias
Erasing system	Magnet erase
Heads	Recording playback head (1) Erasure head (1)

General

Speaker	90 mm cone type (1)
Output	Earphone jack (monaural mini-jack)
Power output	1.7 W (DIN MUSIC POWER) 1 W (EIAJ 4 ohms, T.H.D. 10%) 0.8 W (DIN 1% Rated Power)
Power requirements	DC 6 V using four size C (R14) batteries AC 230 V,50 Hz
Power consumption	6 W
Dimensions	279 (W) x 128 (H) x 101 (D) mm
Weight	1.2 kg (excluding batteries)

- Design and specifications are subject to change without notice.

ACCESSORIES LIST

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	8Z-CM2-908-010	IB,EZ(9L)A	
2	87-A80-081-010	AC CORD SET ASSY,EZ BLK	

ELECTRICAL MAIN PARTS LIST

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REF. NO	PART NO.	KANRI NO.	DESCRIPTION	REF. NO	PART NO.	KANRI NO.	DESCRIPTION
IC				C239	87-A10-411-010		CAP,CER 0.047-16 K SR
	88-CM2-608-010	IC,TA7628 HP		C240	87-A10-176-010		CAP,CER 1000P-50 M D
	8Z-CM2-646-010	IC,TA2132P		C301	87-A10-577-010		CAP,CER 0.022-50 Z YF
TRANSISTOR				C302	87-A10-577-010		CAP,CER 0.022-50 Z YF
	87-CD7-603-080	TR,SS8050		C303	87-010-236-080		CAP,E 1000-16 SME
	89-319-233-010	TR,2SC1923(O)		C304	87-A10-411-010		CAP,CER 0.047-16 K SR
				C305	87-010-221-080		CAP, ELECT 470-10V
				C306	87-010-221-080		CAP, ELECT 470-10V
DIODE				C307	87-A10-411-010		CAP,CER 0.047-16 K SR
				C308	87-010-248-080		CAP, ELECT 220-10V
	87-A40-246-080	DIODE,IN4148 T-72		C309	87-A10-211-010		CAP,CER 0.1-50 M
	87-A40-357-080	ZENER,3.9V		C311	87-010-248-080		CAP, ELECT 220-10V
	86-CM3-601-080	DIODE,CDG-24		CF101	8Z-CM1-642-010		FLTR,SFU465B
	87-017-088-080	ZENER,4.7V		CF102	82-785-747-080		FILTER, SFE10.7MS2-A
	8Z-CM1-657-010	DIODE, IN60P		CF103	87-008-554-010		FLTR,CF CDA10.7MG60-A
				CF104	82-785-747-080		FILTER, SFE10.7MS2-A
	8Z-CM1-656-010	DIODE, 1N4001B		D104	87-CD8-614-010		VARI-CAP,1S2638
				J1	8Z-CM1-608-010		JACK, EP ZCM-1
MAIN C.B				L101	8Z-CM2-669-010		COIL,FM RF4T4.5MM
				L102	8Z-CM2-661-010		COIL,FM RF4T5MM
	C100	87-A10-176-010	CAP,CER 1000P-50 M D	L103	8Z-CM2-660-010		COIL,FM OSC3T5.5MM
	C104	87-A10-577-010	CAP,CER 0.022-50 Z YF	L104	87-003-143-080		COIL,4.7UH
	C106	87-A10-162-010	CAP CER 68P-50 KSL	L105	8Z-CM2-668-010		COIL,BAR ANTLW
	C110	87-A10-496-010	CAP,CER 18P-50 J CH	L107	8Z-CM2-642-010		COIL,BAR ANTMW
	C113	87-A10-176-010	CAP,CER 1000P-50 M D	L201	87-003-149-080		COIL,47UH
				L301	87-003-149-080		COIL,47UH
	C114	87-010-404-080	CAP, ELECT 4.7-50V	PR301	87-A91-703-080		FUSE PROTECTOR,800MA/60V
	C115	87-A10-166-010	CAP,CER 150P-50 K B	PVC2	8Z-CM1-636-010		TUN-CAP, EZ
	C117	87-A10-171-010	CAP,CER 390P-50 K B	R306	87-A00-436-050		RES,100-1/2W J RP
	C118	87-A11-848-080	CAP,CER 24P-50V	SW101	8Z-CM2-649-010		SW,SL 2-6-3 BAND
	C121	87-010-404-080	CAP, ELECT 4.7-50V				
				SW201	8Z-CM2-647-010		SW,SL 2-4-2 FUNC
	C122	87-A10-182-010	CAP,CER 0.01-50 Z F	SW202	8Z-CM2-650-010		SW,PUSH 2-6-2 REC
	C124	87-010-400-080	CAP, ELECT 0.47-50V	SW203	8Z-CM2-648-010		SW,SL 2-2-2 BEAT
	C126	87-010-402-080	CAP, ELECT 2.2-50V	T101	8Z-CM2-667-010		COIL,LWOSC
	C128	87-010-405-080	CAP, ELECT 10-50V	T103	8Z-CM2-638-010		COIL,MW OSC
	C131	87-A10-413-010	CAP,CER 2200P-4K M E KX				
				T104	8Z-CM2-637-010		COIL,AM IFT2
	C132	87-A10-182-010	CAP,CER 0.01-50 Z F	T201	8Z-CM1-605-010		COIL, BIAS
	C133	87-010-221-080	CAP, ELECT 470-10V	TC101	87-A91-657-010		TRIMMMER 20P
	C134	87-A10-411-010	CAP,CER 0.047-16 K SR	TC102	87-A91-657-010		TRIMMMER 20P
	C135	87-A10-176-010	CAP,CER 1000P-50 M D	VR201	8Z-CM1-603-010		VR,RTRY 50K A MAIN
	C202	87-010-404-080	CAP, ELECT 4.7-50V				
				VR202	8Z-CM1-604-010		VR,RTRY 10K B TONE
	C203	8Z-CM1-620-010	CAP,CER 500P-50				
	C204	8Z-CM1-620-010	CAP,CER 500P-50				
	C206	87-010-544-080	CAP, ELECT 0.1-50V				
	C207	87-010-380-080	CAP, ELECT 47-16V				
	C209	87-010-221-080	CAP, ELECT 470-10V				
	C211	87-010-221-080	CAP, ELECT 470-10V				
	C212	87-010-400-080	CAP, ELECT 0.47-50V				
	C213	87-010-380-080	CAP, ELECT 47-16V				
	C216	87-A10-170-010	CAP,CER 330P-50 K B				
	C217	87-010-405-080	CAP, ELECT 10-50V				
	C218	8Z-CM1-620-010	CAP,CER 500P-50				
	C219	87-A10-182-010	CAP,CER 0.01-50 Z F				
	C220	87-010-380-080	CAP, ELECT 47-16V				
	C221	87-A10-182-010	CAP,CER 0.01-50 Z F				
	C222	87-A10-182-010	CAP,CER 0.01-50 Z F				
	C223	87-010-401-080	CAP, ELECT 1-50V				
	C224	8Z-CM1-620-010	CAP,CER 500P-50				
	C225	87-010-405-080	CAP, ELECT 10-50V				
	C226	87-010-263-080	CAP, ELECT 100-10V				
	C227	87-010-545-010	CAP, ELECT 0.22-50V				
	C228	87-A10-840-010	CAP,CER 220P-1K K R LONG				
	C229	8Z-CM1-620-010	CAP,CER 500P-50				
	C230	87-010-402-080	CAP, ELECT 2.2-50V				
	C232	87-010-221-080	CAP, ELECT 470-10V				
	C234	87-010-380-080	CAP, ELECT 47-16V				
	C235	87-A10-211-010	CAP,CER 0.1-50 M				
	C236	87-A10-182-010	CAP,CER 0.01-50 Z F				
	C237	87-010-544-080	CAP, ELECT 0.1-50V				
	C238	87-010-248-080	CAP, ELECT 220-10V				

TRANSISTOR ILLUSTRATION

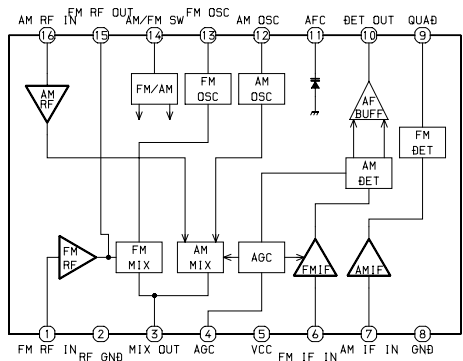


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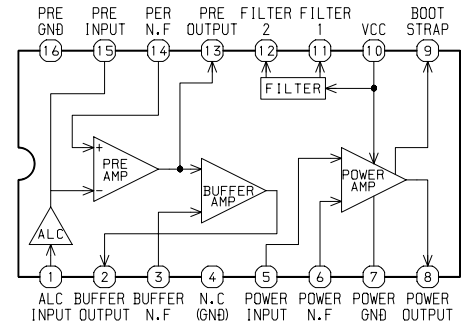
2SC1923
SS8050

IC BLOCK DIAGRAM

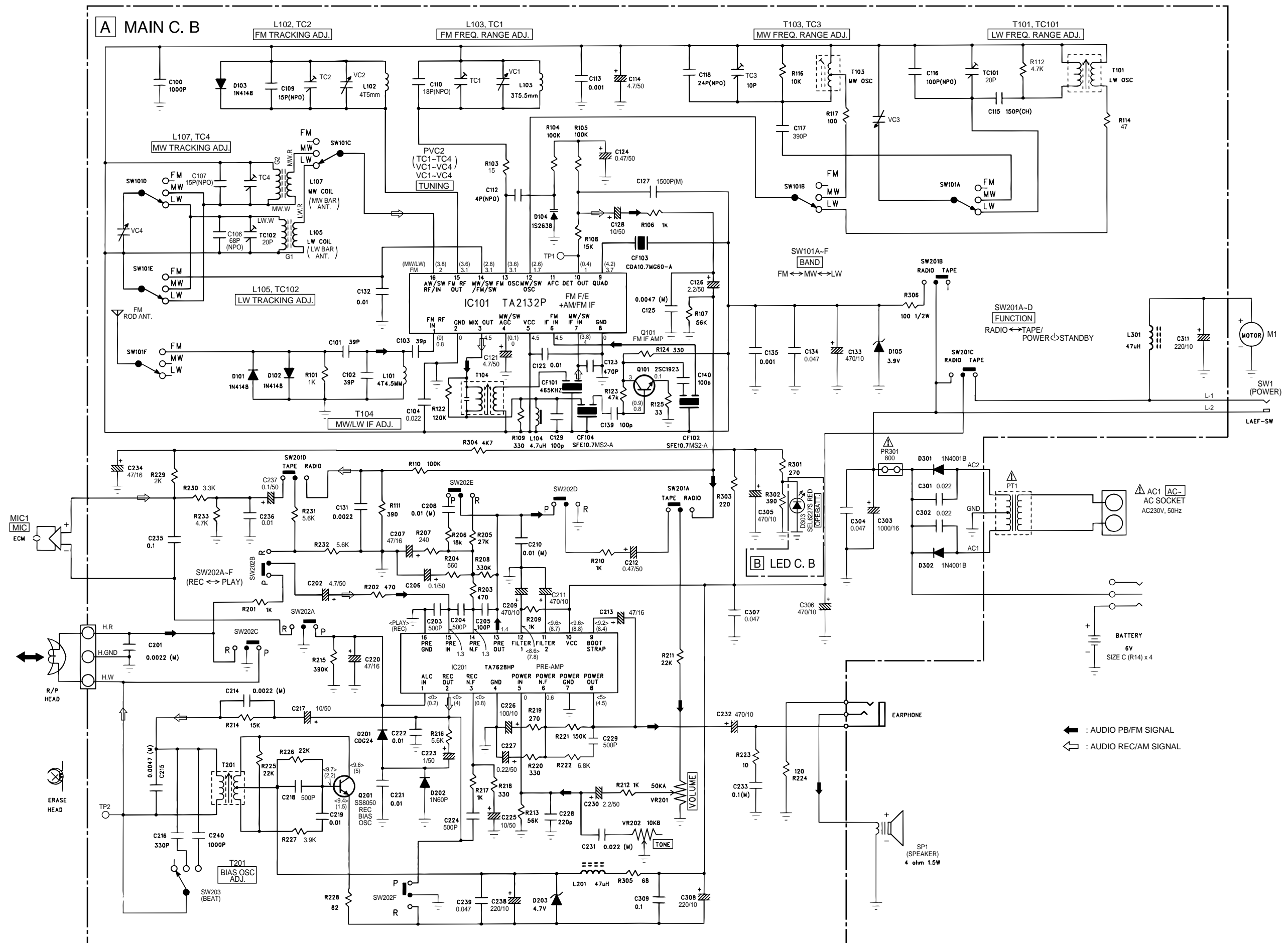
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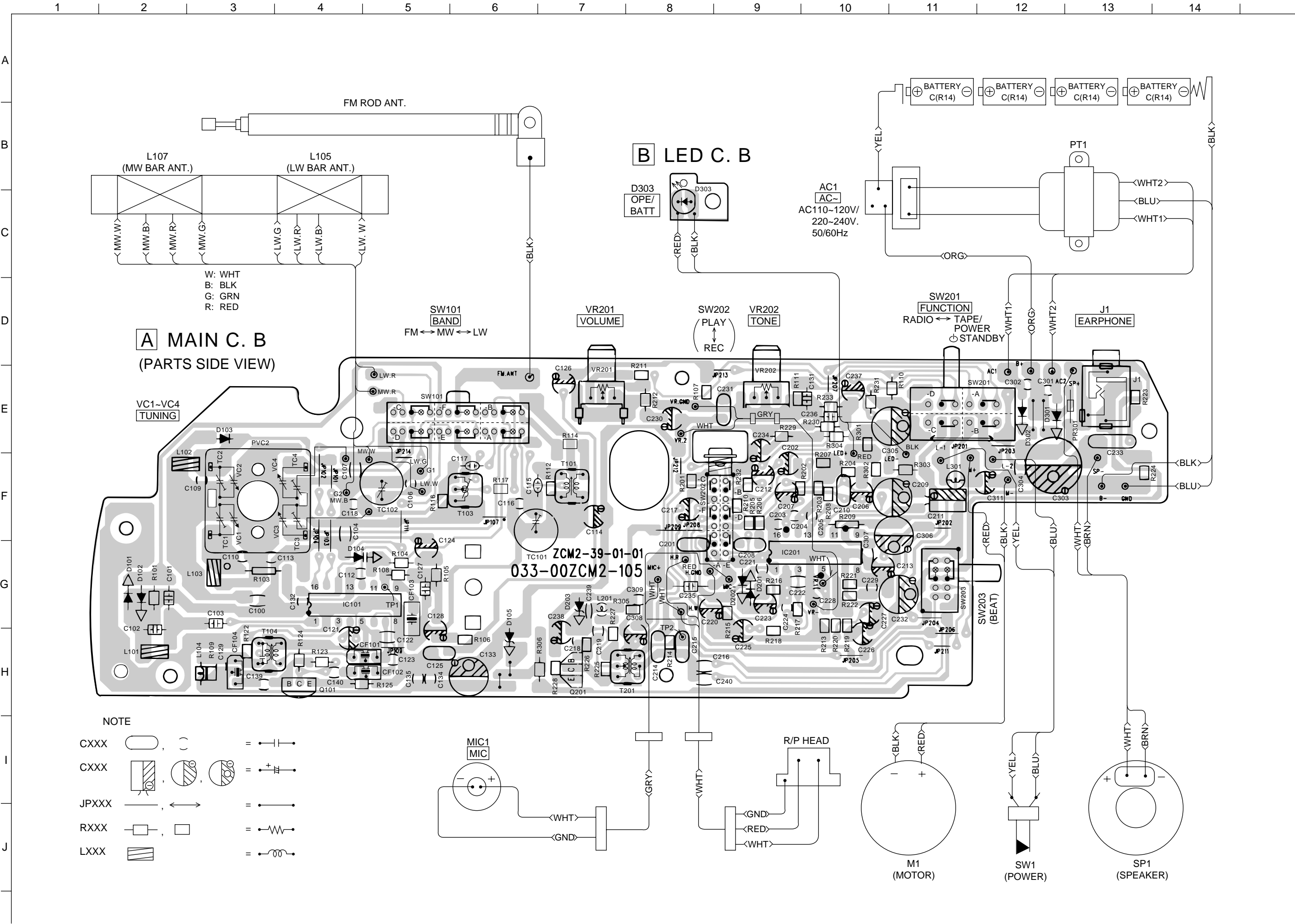


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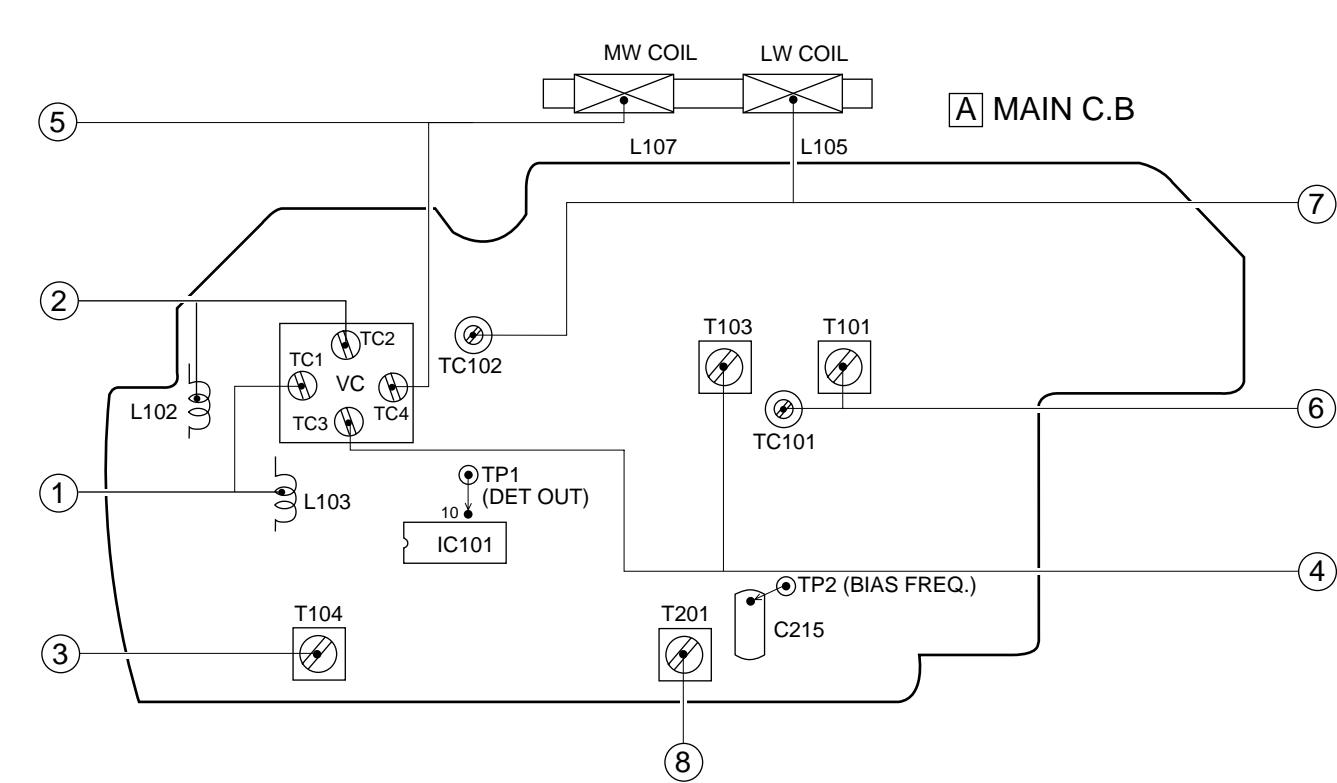


SCHEMATIC DIAGRAM





ADJUSTMENT



<TUNER SECTION>

- 1. FM Freq. Range Adjustment
L103 87.4 MHz
TC1 108.3 MHz
- 2. FM Tracking Adjustment
L102 88 MHz
TC2 108 MHz
- 3. AM IF Adjustment
T104 465 kHz
- 4. MW Freq. Range Adjustment
T103 515 kHz
TC3 1635 kHz
- 5. MW Tracking Adjustment
L107 600 kHz
TC4 1400 kHz
- 6. LW Freq. Range Adjustment
T101 145 kHz
TC101 295 kHz
- 7. LW Tracking Adjustment
L105 150 kHz
TC102 280 kHz

<TAPE DECK SECTION>

- 8. Bias Freq. Adjustment
T201 60 kHz

PRACTICAL SERVICE FIGURE

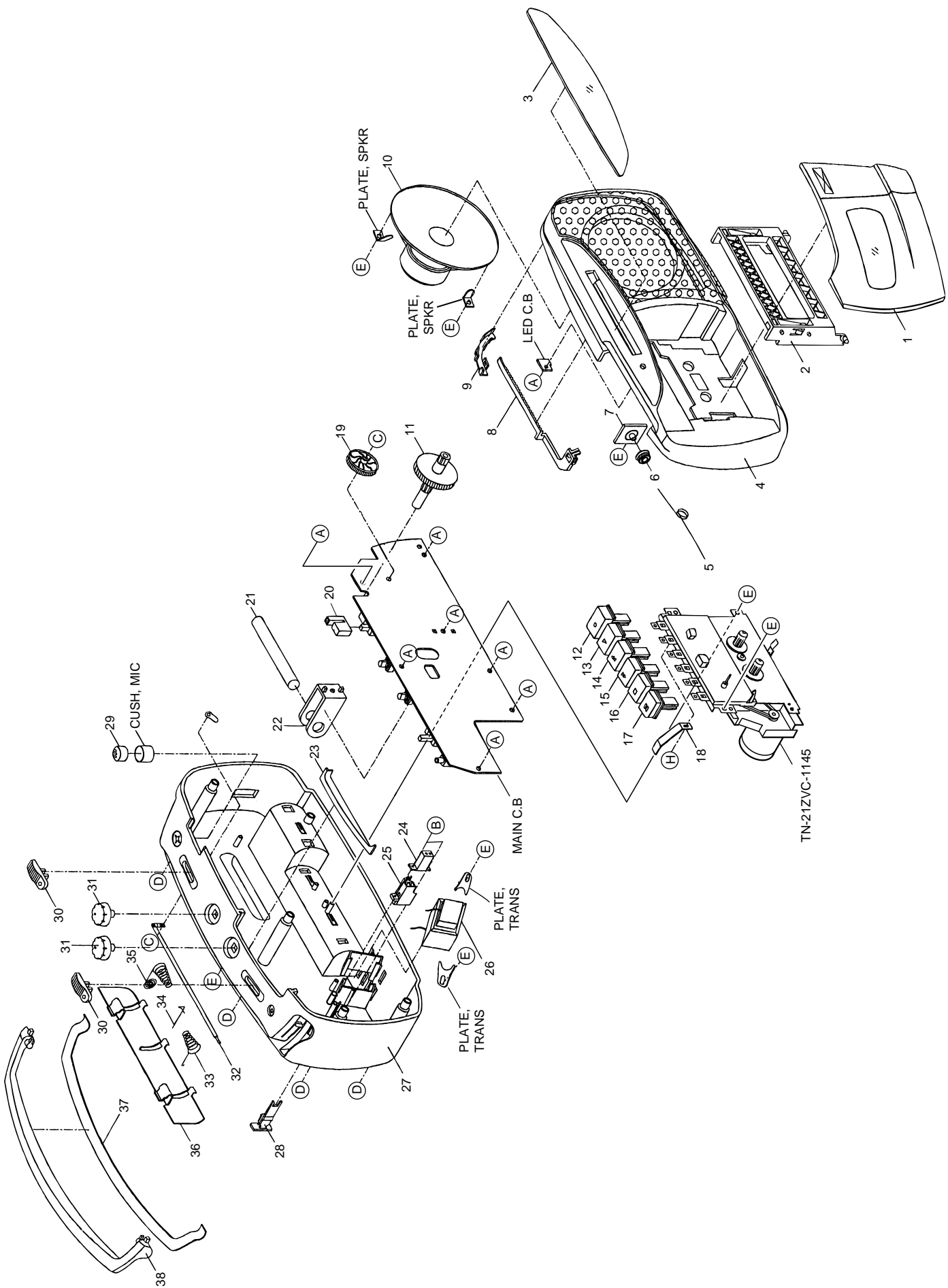
<TUNER SECTION>

Sensitivity:	
FM (IHF, THD 3%)	Less than 22 dB (at 88, 98, 108 MHz)
MW (S/N 10 dB)	Less than 52 dB (at 600, 1,000, 1,400 kHz)
LW (S/N 10 dB)	Less than 65 dB (at 150, 200, 280 kHz)
Intermediate Frequency:	FM 10.7 MHz AM 465 kHz

<TAPE SECTION>

Distortion:	Less than 3.0% (PB)
S/N Ratio:	More than 35 dB
Noise Level:	Less than 30 mV (VR Max.) Less than 2 mV (VR Min.)
Tape Speed:	3000 Hz + 90% - 60%
Take up Torque	30 - 60 g-cm
FF/Rew Torque	45 - 140 g-cm
FF/Rew Time	100 - 170 sec
Wow & Flutter:	Less than 0.4% (RMS)

MECHANICAL EXPLODED VIEW 1/1



MECHANICAL MAIN PARTS LIST

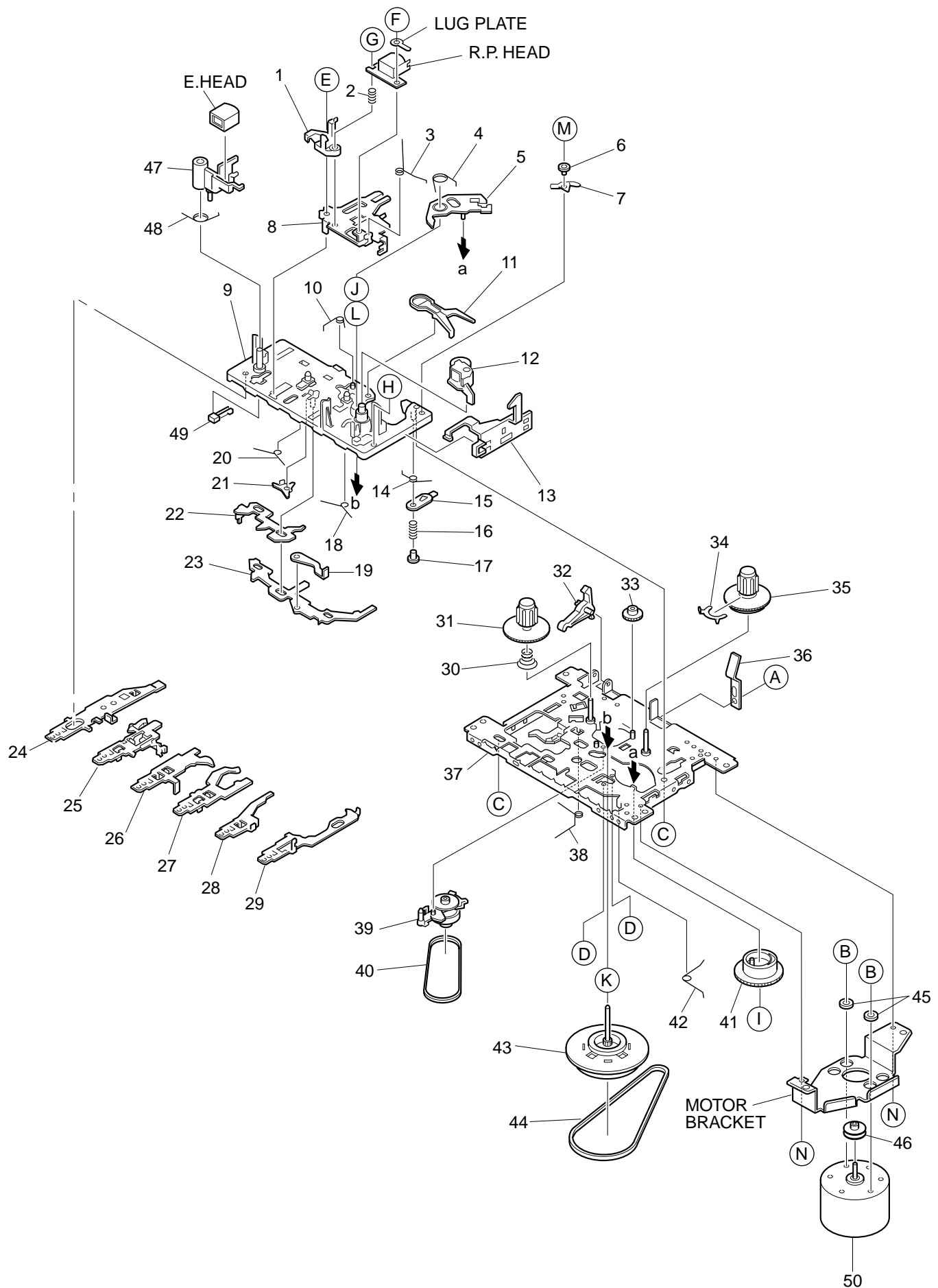
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1	8Z-CM2-024-010		COVER, CASS EX	26	8Z-CM2-605-010		PT,E ZCM-2
2	8Z-CM2-009-010		HLDR,CASS	27	8Z-CM2-023-010		CABI,REAR EZ
3	8Z-CM2-027-010		WINDOW,TUNING EZ	28	8Z-CM2-032-010		KNOB,SL BEAT
4	8Z-CM2-063-010		CABI,FR EX ASSY (S)	29	88-CS8-625-010		MIC,ECM
5	86-CM2-212-010		SPR-T,CASS	30	8Z-CM2-003-010		KNOB,SL FUNCTION
6	8Z-CM2-208-010		GEAR,CASS	31	8Z-CM2-005-010		KNOB,RTRY VOLUME
7	8Z-CM2-209-010		HLDR,GEAR CASS	32	8Z-CM2-608-010		ANT,ROD FM ZCM-2
8	8Z-CM2-006-010		POINTER,	33	85-CM1-211-010		SPR,BATT(-)
9	8Z-CM2-205-010		COVER, POINTER	34	8Z-CM2-206-010		SPR,BATT (+)
10	8Z-CM2-607-010		SPKR,F 4 4OHM	35	85-CM1-212-010		SPR,BATT(+/-)
11	8Z-CM2-007-010		KNOB,RTRY TUNING	36	8Z-CM2-038-010		LID,BATT EX
12	8Z-CM2-016-010		KEY,CASS REC	37	8Z-CM2-037-010		COVER, HANDLE EX
13	8Z-CM2-015-010		KEY,CASS PLAY	38	8Z-CM2-036-010		HANDL,EX
14	8Z-CM2-014-010		KEY,CASS REW	A	87-741-095-410		UT2+3-8 GLD
15	8Z-CM2-013-010		KEY,CASS FF	B	87-751-074-410		VT2+2.6-8 W/O CUT
16	8Z-CM2-012-010		KEY,CASS STOP	C	87-261-073-410		V+2.6-6
17	8Z-CM2-011-010		KEY,CASS PAUSE	D	87-741-100-410		UT2+3-16(W/O) SLOT
18	8Z-CM2-207-010		PLATE,REC	E	87-651-096-410		SCEW,ST3-10
19	8Z-CM2-201-010		GEAR,TUNING				
20	8Z-CM2-204-010		HLDR,BAND				
21	8Z-CM2-640-010		BAR-ANT,AM				
22	8Z-CM2-202-010		HLDR,BAR-ANT				
23	8Z-CM2-203-010		BLIND,CASS				
24	87-A90-086-010		COVER,AC-SOCKET				
25	87-A60-178-010		JACK,AC E W/SW				

COLOR NAME TABLE

Basic color symbol	Color	Basic color symbol	Color	Basic color symbol	Color
B	Black	C	Cream	D	Orange
G	Green	H	Gray	L	Blue
LT	Transparent Blue	N	Gold	P	Pink
R	Red	S	Silver	ST	Titan Silver
T	Brown	V	Violet	W	White
WT	Transparent White	Y	Yellow	YT	Transparent Yellow
LM	Metallic Blue	LL	Light Blue	GT	Transparent Green
LD	Dark Blue	DT	Transparent Orange		

MECHANISM EXPLODED VIEW 1/1



TAPE MECHANISM PARTS LIST 1/1

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REF. NO	PART NO.	KANRI NO.	DESCRIPTION	REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	S1-921-030-040		HEAD BASE	36	S1-821-100-980		PACK SPRING
2	S1-821-030-070		AZIMUTH SPRING	37	S1-921-015-010		CHASSIS ASSY
3	S1-921-030-030		PANEL P SPRING	38	S1-921-140-210		REC BUTTON LEVER SPRING
4	S1-921-260-050		GEAR PLATE SPRING	39	S1-921-073-020		RF CLUTCH ASSY
5	S1-921-265-020		GEAR PLATE ASSY	40	S1-921-070-030		RF BELT
6	S1-921-140-370		P ARM COLLER	41	S1-921-260-020		CAM GEAR
7	S1-921-140-340		P ARM	42	S1-921-140-160		E ACTUATOR SPRING
8	S1-921-030-010		HEAD PANEL	43	S1-921-093-030		FLYWHEEL ASSY
9	S1-921-143-010		BASE ASSY	44	S1-921-090-040		MAIN BELT
10	S1-921-140-180		M CONTROL SPRING	45	S1-820-130-060		MOTOR RUBBER
11	S1-921-260-4A0		SENSING LEVER	46	S1-921-120-010		MOTOR PULLEY
12	S1-921-043-010		PINCH ROLLER ARM ASY	47	S1-921-030-050		MG ARM
13	S1-921-130-010		EJECT SLIDE LEVER	48	S1-921-030-100		MG ARM SPRING
14	S1-921-140-130		P CONTROL SPRING	49	S6-401-011-490		LEAF SW MSW-1541T
15	S1-921-140-100		PAUSE LEVER	50	S1-010-260-800		MOTOR EG530AD-6B
16	S1-921-140-120		PAUSE LEVER SPRING	A	S9-179-000-000		C TAP SCREW M2-3
17	S1-921-140-110		PAUSE STOPPER	B	S1-821-120-020		MOTOR COLLER SCREW
18	S1-921-140-150		BUTTON LEVER SPRING(B)	C	S9-679-000-000		P TAP SCREW M2-5
19	S1-821-011-590		E KICK LEVER	D	S9-999-180-090		TAPPING SCREW(CAMERA)M2-4.5
20	S1-921-140-140		BUTTON LEVER SPRING(A)	E	S9-004-000-000		SCREW M2-6
21	S1-921-140-200		PR STOPPER	F	S9-115-000-000		+ BIND SCREW M2-3
22	S1-921-140-090		SWITCH ACTUATOR	G	S9-922-000-000		AZIMUTH SCREW M2-8
23	S1-921-140-080		PUSH BUTTON ACTUATOR	H	S9-P05-200-610		SCREW,TAP S M 2-6
24	S1-921-140-030		REC BUTTON LEVER	I	S9-422-000-000		P WASHER CUT 1.2-3.8-0.3
25	S1-921-140-190		PLAY BUTTON LEVER	J	S9-999-030-130		P WASHER CUT 1.45-3.8-0.5
26	S1-921-140-040		REW BUTTON LEVER	K	S9-786-000-000		P WASHER 2-3.5-0.3
27	S1-921-140-050		FF,BUTTON REVER	L	S9-999-000-030		P WASHER2.1-4-0.13
28	S1-921-140-060		STOP BUTTON LEVER	M	S9-999-200-410		P TAP SCREW M2-3
29	S1-921-140-070		PAUSE BUTTON LEVER	N	S9-180-000-000		C TAP SCREW M2-4
30	S1-829-100-100		BACK TENSION SPRING				
31	S1-921-053-020		SUPPLY REEL ASSY				
32	S1-821-100-690		RECORD SAFETY LEVER				
33	S1-821-100-700		FF GEAR				
34	S1-921-050-060		SENSOR				
35	S1-921-053-010		TAKE UP REEL ASSY				



サービス技術ニュース	
番号	連絡内容
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